

REMARKS

Summary of the Amendment

Upon entry and consideration of the instant amendment, claims 5, 12, 14, 16-18 and 20 will have been amended and claims 22-25 will have been added. Accordingly, claims 5-25 will be pending and under consideration.

Summary of the Official Action

In the instant Office Action, the Examiner rejected claims 12-21 as being indefinite. Finally, the Examiner rejected claims 5-21 over the applied art of record. By the present remarks, Applicant submits that the rejections have been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

The Section 112, 2nd Paragraph, is Moot

Claims 12-21 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claim 12 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite because it recites the term “disposition” instead of “deposition”. Applicant does not disagree and has herein amended the claims to correct this typographical error.

Claims 12 and 17 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for reciting a feature lacking proper antecedent basis and the term “disposition” instead of “deposition”. Applicant does not disagree and has herein amended the claims to correct these errors.

Accordingly, Applicant requests that the Examiner reconsider and withdraw the rejection of these claims under 35 U.S.C. § 112, second paragraph.

Traversal of Rejection Under 35 U.S.C. § 102/103

Applicant traverses the rejection of claims 5, 12 and 17 under 35 U.S.C. § 102(b) as being anticipated or alternatively under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 3,478,494 to LUSTENADER et al.

In the rejection, the Examiner asserted that LUSTENADER discloses or suggest all the recited features of these claims. Applicant respectfully traverses this rejection.

Applicant respectfully submits that this rejection is improper because LUSTENADER fails to disclose, or even suggest: inter alia, an electrostatic separator for separating particles containing oil out of a gas stream of an internal combustion engine crankcase, *wherein the electrostatic separator is structured and arranged to separate the particles containing oil from the gas stream of the internal combustion engine crankcase*, as recited in amended independent claim 5; inter alia, an electrostatic separator to separate oil from a gas stream of an internal combustion engine crankcase, *wherein the electrostatic separator is structured and arranged to separate, in the chamber by virtue of the gas stream being directed to the wall of the chamber, oil particles from the gas stream of the internal combustion engine crankcase*, as recited in amended independent claim 12; and inter alia, a method for separating oil from a gas stream, comprising directing a portion of oil particles in the gas stream against a wall of a chamber, forming a corona region at one end of an emission electrode and forming a deposition region at an opposite end of the emission electrode, in which both the corona region and the deposition region are located spatially below the chamber, *collecting charged oil particles on a deposition electrode surrounding the emission electrode*, and receiving the portion of oil particles directed against the chamber wall and the charged oil particles collected on the deposition electrode in an outlet adjacent the deposition electrode, as recited in amended

independent claim 17.

Applicant does not dispute that LUSTENADER teaches an electrostatic separator which utilizes corona discharge and separates particles from a gas stream in a collector 17 (see col. 3, lines 25-42). However, there is no apparent disclosure or suggestion in LUSTENADER with regard to the electrostatic separator being utilized to separate particles containing oil out of a gas stream of an internal combustion engine crankcase, much less, that the *electrostatic separator is structured and arranged to separate the particles containing oil from the gas stream of the internal combustion engine crankcase* (claim 5), and/or that the *electrostatic separator is structured and arranged to separate, in the chamber by virtue of the gas stream being directed to the wall of the chamber, oil particles from the gas stream of the internal combustion engine crankcase* (claim 12). Furthermore, as claim 17 relates to a method that specifically and positively recites *separating oil from a gas stream*, the Examiner is not free to ignore the fact that claim 17 clearly requires separating oil from a gas stream and must acknowledge that LUSTENADER teaches only to separate particles from a gas stream.

For the foregoing reasons and because this document fails to disclose the above-noted features of the instant invention, Applicant submits that this document fails to disclose each and every recited feature of claims 5, 12 and 17. Accordingly, Applicant submits that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b) and that the instant rejection is improper.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection and further requests that the above noted claims be indicated as allowable.

Traversal of Rejections Under 35 U.S.C. § 103(a)

Over Lustenader with Gillingham

Applicant traverses the rejection of claims 6-11, 13-16 and 18-21 under 35 U.S.C. § 103(a) as being unpatentable over LUSTENADER in view of US Patent No. 4,588,423 to GILLINGHAM et al.

In the rejection, the Examiner acknowledged that LUSTENADER fails to disclose the recited features of these claims, but asserts that the non-disclosed features are taught in GILLINGHAM and that these claims are therefore rendered obvious by a fair combination of these documents. Applicant respectfully traverses this rejection.

Applicant reiterates the arguments presented above with regard to claims 5, 12 and 17 and LUSTENADER, and further asserts that GILLINGHAM similarly fails to disclose or suggest the features recited in at least amended independent claims 5, 12 and 17.

Applicant does not dispute that GILLINGHAM teaches an electrostatic separator which separates particles from a gas stream (see col. 1, lines 10-12) and that can be used on a vehicle having an internal combustion chamber (see col. 1, lines 14-24 and col. 5, lines 7-8). However, it is clear from col. 8, lines 1-2 of GILLINGHAM that the separator is utilized to separate particles from engine exhaust gas and is not utilized to separate particles containing oil out of a gas stream of an internal combustion engine crankcase, much less, that the *electrostatic separator is structured and arranged to separate the particles containing oil from the gas stream of the internal combustion engine crankcase* (claim 5), and/or that the *electrostatic separator is structured and arranged to separate, in the chamber by virtue of the gas stream being directed to the wall of the chamber, oil particles from the gas stream of the internal combustion engine crankcase* (claim 12). Furthermore, as claim 17 relates to a method that specifically and positively recites *separating oil from a gas*

stream, the Examiner is not free to ignore the fact that claim 17 clearly requires separating oil from a gas stream.

Because no proper reading of the above-noted documents disclose or suggest at least the above-noted features of the instant invention, Applicant submits that no proper combination of these documents can render unpatentable the combination of features recited in at least independent claims 5, 12 and 17.

Furthermore, Applicant submits that there is no rationale disclosed or suggested in the art to modify LUSTENADER in view of GILLINGHAM in the manner asserted by the Examiner. Nor does the Examiner's opinion provide a proper basis for these features. Therefore, Applicant submits that the invention as recited in at least independent claims 5, 12 and 17 is not rendered obvious by any reasonable inspection of these disclosures.

Finally, Applicant submits that the above-noted dependent claims 6-11, 13-16 and 18-21 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that no proper combination of LUSTENADER and GILLINGHAM discloses or suggests: that the gas flow direction is from a top of the separator to a bottom of the separator, whereby the front corona region is oriented upwards and wherein the chamber is located above the emission electrode as recited in claim 6; that the chamber is structured and arranged to form a cyclone above the emission electrode to redirect the gas stream as recited in claim 7; that the gas flow direction is from a top of the separator to a bottom of the separator and wherein walls of the chamber adjoin the deposition electrode so that separated particles collected on the chamber walls flow downward along the deposition electrode to the outlet opening as recited in claim 8; that the gas flow direction is from a bottom of the separator to a top of the separator, whereby the front corona

region is oriented downwards and wherein the chamber is located above the emission electrode as recited in claim 9; that the electrostatic separator further comprises a baffle arranged within the chamber to redirect the gas stream outwardly as recited in claim 10; that the gas flow direction is from a bottom of the separator to a top of the separator and wherein the outlet opening is arranged between the deposition electrode and walls of the chamber as recited in claim 11; that the gas stream flows from a top of the separator to a bottom of the separator, and the chamber is arranged in front of the emission electrode, relative to gas stream flow direction as recited in claim 13; that the chamber is structured to form a cyclone, which directs the portion of oil particles in the gas stream against the chamber wall as recited in claim 14; that the gas stream flows from a bottom of the separator to a top of the separator, and the chamber is arranged after the emission electrode, relative to gas stream flow direction as recited in claim 15; that the chamber includes a baffle structured and arranged to direct the portion of oil particles in the gas stream against the chamber wall as recited in claim 16; that the gas stream flows from the chamber to the a top of the deposition electrode, the corona region is formed downstream from the chamber, relative to a gas stream flow direction, and the outlet for receiving the portion of oil particles is arranged at one of level with the deposition region and behind the deposition region, relative to the gas stream flow direction as recited in claim 18; that the directing of the portion of oil particles in the gas stream against a wall of the chamber comprises creating a rotational flow path for the gas stream entering the chamber as recited in claim 19; that the gas stream flows from the corona region to the chamber, and the outlet for receiving the portion of oil particles is arranged at one of level with the deposition region and behind the deposition region, relative to the gas stream flow direction as recited in claim 20; and that the directing of the portion of oil particles in the gas stream against a wall of the chamber comprises deflecting the gas stream radially outward as recited in claim 21.

Accordingly, Applicant requests reconsideration and withdraw the above-noted rejection under 35 U.S.C. § 103(a) and indicate that this claim is allowable over the applied art of record.

Over Lustenader with Gillingham and Krausse

Applicant traverses the rejection of claims 5-21 under 35 U.S.C. § 103(a) as being unpatentable over LUSTENADER in view of GILLINGHAM and further in view of EP 0 685 635 to KRAUSSE.

In the rejection, the Examiner acknowledged that LUSTENADER and GILLINGHAM fails to disclose certain recited features of these claims such as separating oil from an air stream, but asserts that the non-disclosed features are taught in KRAUSSE, and that these claims are therefore rendered obvious by a fair combination of these documents. Applicant respectfully traverses this rejection.

Applicant reiterates the arguments presented above with regard to claims 5, 12 and 17 and LUSTENADER and GILLINGHAM, and further asserts that KRAUSSE similarly fails to disclose or suggest the features recited in at least amended independent claims 5, 12 and 17.

Applicant does not dispute that KRAUSSE teaches an electrostatic separator which separates oil from a gas stream of an engine crankcase (see Abstract). However, it is apparent from the figure that KRAUSSE does not teach a chamber having a gas stream inlet and being structured and arranged to redirect the gas stream entering the chamber, much less, an outlet opening structured to receive the separated particles and arranged adjacent the deposition electrode and at a level with or after, relative to the gas flow direction, the rear deposition region (claim 5). To the contrary, the figure shows an inlet gas flow 5 that is the same direction as outlet gas flow 7 inside the chambers 10 and 2. Furthermore, the figure shows the outlet opening for the oil collector 4 below the deposition

area of the wall 2.

It is also apparent from the figure that KRAUSSE also fails to teach or suggest a chamber arranged to direct a portion of oil particles in the gas stream against a wall of the chamber and an outlet adjacent the deposition electrode and arranged to receive the portion of oil particles directed against the wall of the chamber and the charged oil particles collected by the deposition electrode, wherein the electrostatic separator is structured and arranged to separate, in the chamber by virtue of the gas stream being directed to the wall of the chamber, oil particles from the gas stream of the internal combustion engine crankcase (claim 12). To the contrary, the figure of KRAUSSE merely teaches that to pass the oil containing gas though the direction indicated by arrows 5 and 7 without causing the gas stream to be directed to and against the wall of the chamber.

With regard to claim 17, Applicant submits that the figure that KRAUSSE also fails to teach or suggest directing a portion of oil particles in the gas stream against a wall of a chamber, forming a corona region at one end of an emission electrode and forming a deposition region at an opposite end of the emission electrode, in which both the corona region and the deposition region are located spatially below the chamber, collecting charged oil particles on a deposition electrode surrounding the emission electrode, and receiving the portion of oil particles directed against the chamber wall and the charged oil particles collected on the deposition electrode in an outlet adjacent the deposition electrode. Again, the figure of KRAUSSE merely teaches that to pass the oil containing gas though the direction indicated by arrows 5 and 7 without causing the gas stream to be directed against the wall of the chamber.

Because no proper reading of the above-noted documents disclose or suggest at least the above-noted features of the instant invention, Applicant submits that no proper combination of these documents can render unpatentable the combination of features recited in at least independent claims

5, 12 and 17.

Furthermore, Applicant submits that there is no rationale disclosed or suggested in the art to modify LUSTENADER in view of GILLINGHAM and KRAUSSE in the manner asserted by the Examiner. Nor does the Examiner's opinion provide a proper basis for these features. Therefore, Applicant submits that the invention as recited in at least independent claims 5, 12 and 17 is not rendered obvious by any reasonable inspection of these disclosures.

Finally, Applicant submits that the above-noted dependent claims 6-11, 13-16 and 18-21 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that no proper combination of LUSTENADER, GILLINGHAM and KRAUSSE discloses or suggests: that the gas flow direction is from a top of the separator to a bottom of the separator, whereby the front corona region is oriented upwards and wherein the chamber is located above the emission electrode as recited in claim 6; that the chamber is structured and arranged to form a cyclone above the emission electrode to redirect the gas stream as recited in claim 7; that the gas flow direction is from a top of the separator to a bottom of the separator and wherein walls of the chamber adjoin the deposition electrode so that separated particles collected on the chamber walls flow downward along the deposition electrode to the outlet opening as recited in claim 8; that the gas flow direction is from a bottom of the separator to a top of the separator, whereby the front corona region is oriented downwards and wherein the chamber is located above the emission electrode as recited in claim 9; that the electrostatic separator further comprises a baffle arranged within the chamber to redirect the gas stream outwardly as recited in claim 10; that the gas flow direction is from a bottom of the separator to a top of the separator and wherein the outlet opening is arranged between the deposition electrode and walls of the chamber as recited in claim 11; that the gas stream

flows from a top of the separator to a bottom of the separator, and the chamber is arranged in front of the emission electrode, relative to gas stream flow direction as recited in claim 13; that the chamber is structured to form a cyclone, which directs the portion of oil particles in the gas stream against the chamber wall as recited in claim 14; that the gas stream flows from a bottom of the separator to a top of the separator, and the chamber is arranged after the emission electrode, relative to gas stream flow direction as recited in claim 15; that the chamber includes a baffle structured and arranged to direct the portion of oil particles in the gas stream against the chamber wall as recited in claim 16; that the gas stream flows from the chamber to the a top of the deposition electrode, the corona region is formed downstream from the chamber, relative to a gas stream flow direction, and the outlet for receiving the portion of oil particles is arranged at one of level with the deposition region and behind the deposition region, relative to the gas stream flow direction as recited in claim 18; that the directing of the portion of oil particles in the gas stream against a wall of the chamber comprises creating a rotational flow path for the gas stream entering the chamber as recited in claim 19; that the gas stream flows from the corona region to the chamber, and the outlet for receiving the portion of oil particles is arranged at one of level with the deposition region and behind the deposition region, relative to the gas stream flow direction as recited in claim 20; and that the directing of the portion of oil particles in the gas stream against a wall of the chamber comprises deflecting the gas stream radially outward as recited in claim 21.

Accordingly, Applicant requests reconsideration and withdraw the above-noted rejection under 35 U.S.C. § 103(a) and indicate that this claim is allowable over the applied art of record.

New Claims are also Allowable

Applicant submits that the new claims 22-25 are allowable over the applied art of record.

Specifically, claim 22-25 depends from claims 5 and 12 which are believed to be allowable. Moreover, claims 22-25 recite a combination of features which are clearly not disclosed or suggested by the applied art of record. Accordingly, Applicant respectfully requests consideration of these claims and further requests that the above-noted claims be indicated as being allowable.

Application is Allowable

Thus, Applicant respectfully submits that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 112, 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

Authorization to Charge Deposit Account

The Commissioner is authorized to charge to Deposit Account No. 19-0089 any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, in order to maintain pendency of this application.

CONCLUSION

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicant's invention, as recited in each of the pending claims.

The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,
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